

VIII. *Description of a Set of Halo's and Parbelia, seen in the Year 1771, in North-America. By Alexander Baxter, Esq.; communicated by Sir Joseph Banks, Bart. P. R. S.*

Read December 7, 1786.

EXTRACT from a journal kept in the upper countries of North-America. At Fort Gloucester, on the river of Lake Superior, six miles above the falls of St. Mary's, and as much from the head of the river, where it issues from the Lake.

“ January 22, 1771. Last night and to-day the frost has been more severe than at any time this winter: I was hardly able, at mid-day, to keep my face to the wind uncovered, though the sun shone very bright, and the sky clear.

“ In the morning the wind was easterly, which went about with the sun to the south and westward, returning to the east in the evening; a very small breeze.

“ A little before two o'clock P.M. observed as follows. There was a very large circle or halo round the sun (see Tab. V.) within which the sky was thick and dusky, the rest of the hemisphere being clear; and, a little more than one-third way from the horizon to the zenith, was a beautifully enlightened circle, parallel to the horizon, which went quite round, till the two ends of it terminated in the circle that surrounded the sun; where

where, at the points of intersection, they each formed a luminous appearance about the bulk of the sun, and so like him when seen through a thick hazy sky, that they might very easily have been taken for him. (Mock suns or parhelia). Directly opposite to the sun was a luminous cross, in the shape of a St. Andrew's Cross, cutting at the point of intersection the horizontal circle, where was formed another mock sun, like the other two mentioned above. The two lower limbs of the cross appeared but faintly a little way below the circle, the two higher reached a good way above the circle towards the zenith very clear and bright. In this horizontal circle, directly half-way betwixt the sun of the cross and those at the ends of the same circle, were other two mock suns, same kind and size, one on each side; so that in this horizontal circle were five mock suns, at equal distances from one another, and in the same line the real sun, all at equal heights from the horizon. Besides these meteors, there was, very near the zenith, but a little more towards the circle of the real sun, a rainbow of very bright and beautiful colours, not an entire semi-circle, with the middle of the convex side turned towards the sun, which lowered as the sun descended.

“ It was a little before two o'clock P.M. when I first observed this phenomenon, and it continued in all its beauty and lustre till about half after two.

“ The cross went gradually off first; then the horizontal circle began to disappear in parts, while in others it was visible; then the three mock suns farthest from the sun, the two in the sun's circle continuing longest; the rainbow began to decrease after these; and, last of all, the sun's circle, but it was observable at three o'clock, or after it.

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“ The weather continued fine, but the next day was a little softer.”

I have subjoined a diagram of the phænomenon, in order to give a better idea of it than my feeble description, which I have copied literally, as it was set down in my journal at the time, and in a hurry.

ALEX. BAXTER.

Odiham, August 21, 1786.



